Mental disorders as "brain diseases" and Jaspers' legacy

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This year we celebrate the 100th anniversary of the publication of the first edition of Karl Jaspers' *General Psychopathology* (1), and some authors (2,3) have already noticed significant analogies between the historical moment in which that classical text appeared and the present one. The most striking analogy is that nowadays, exactly like one century ago, the enthusiasm brought about by a period of exceptional progress of research in neurosciences is being followed by some disillusionment, due to the limited relevance of that progress to the elucidation of the pathophysiology of mental disorders. To this disillusionment, the psychiatric field is now reacting in a way that resonates in several respects with Jaspers' analysis, making a revisitation of his *General Psychopathology* extremely useful.

In line with Jaspers' analysis is first of all the current acknowledgment of the limitations of the scientific paradigm of 19th century medicine (identifying signs and symptoms, constructing syndromes, taking course into account, and then looking for biological processes that explain the syndromes), when applied to psychiatry. That paradigm seemed to work in the case of general paresis of the insane. However, as Jaspers notices, that disease was not an appropriate "model for clinical psychiatric research" (1, p. 566). In fact, the symptomatic psychoses occurring in general paresis were "in no way different from other psychoses associated with brain disease, neither in the psychological symptoms nor in the sequence of psychic phenomena throughout the illness" (1, p. 566). Apart from general paresis, Jaspers argues, "there has been no fulfillment of the hope that clinical observation of psychic phenomena, of the life-history and of the outcome might yield characteristic groupings which would subsequently be confirmed in the cerebral findings" (1, p. 568). "The idea of the disease-entity is in truth an idea in Kant's sense of the world" (1, p. 569). Even in the cases of schizophrenia and manic-depressive illness, "one is always confined to types" (1, p. 611), that is, "fictitious constructs which in reality have fluid boundaries" (1, p. 560).

These arguments are now being reproposed by several leaders in the psychiatric field. According to First (4, p. 13), "besides the identification of the spirochete as the etiological factor underlying the psychotic disorder general paresis of the insane, the reductionistic 19th-century disease model has not been applicable to any other psychiatric syndrome". For Kupfer et al (5, p. xix), "reification of DSM-IV entities, to the point that they are considered to be equivalent to diseases, is more likely to obscure than to elucidate research findings". According to Hyman (6, p. xix), "scientists attempting to discover genetic or neural underpinnings of disease have all too often reified the disorders listed in DSM-IV-TR as 'natural kinds'". For Charney et al (7, p. 34), "many, and perhaps most, of the current symptom clusters of DSM will ultimately not map onto distinct disease states".

A second element of the current debate resonating with Jaspers' analysis is the critique of Griesinger's maxim (8) that "all mental illnesses are cerebral illnesses" (see 9 in this issue of the journal). This statement, according to Jaspers, "is nothing but dogma" (1, p. 496). "We know that in general no psychic event exists without the precondition of some physical basis; there are no 'ghosts'" (1, p. 459), but "cerebral diseases are just one of the causes of psychic disturbance among many" (1, p. 496). Indeed, according to Bolton (10), a damage to the neural substrate is not necessary for failure of psychological function. Building upon Dennett's model (11), Bolton points out that, just as irrational moves by a chess-playing computer may be explained not only from a "physical stance" (short-circuits, over-heating, blown fuses) but also from a "design stance" (suboptimal programming), mental dysfunction may involve lesions or functional abnormalities of the brain, but also, for instance, maladaptive operating rules acquired by learning. These maladaptive rules will certainly be implemented through the brain, but this does not mean that an actual dysfunction of neural circuits must be present (a suboptimal chess-playing program can be implemented through an intact computer machinery). Of course, as Jaspers recognizes, primarily psychic events may themselves produce a brain dysfunction ("cerebral changes may also be the result of primary psychic phenomena") (1, p. 496), but this is a possibility, not a prerequisite. Analogous to Dennett's example revisited by Bolton is that proposed by Kendler (12, p. 435) of the young man performing a statistical analysis on his computer and getting the wrong result because he has made a mistake in his statistical program. He tries to solve the problem by taking off the back of his computer, pulling out the motherboard and reaching for his soldering iron, hoping to find a loose connection to solder, while in fact there is none.

Even when a primary morbid cerebral process is actually occurring – Jaspers argues – there is not a one-to-one

correspondence between that cerebral process and the psychic event that will result. "We do not know a single physical event in the brain which could be considered the identical counterpart of any morbid psychic event. We only know conditioning factors for the psychic life; we never know *the* cause of the psychic event, only *a* cause" (1, p. 459). Furthermore, "the specific psychic disposition of the individual conditions the specific type of psychic reaction to the cerebral disease process" (1, p. 458), so that a given cerebral process may correspond to a variety of psychic events. These arguments resonate with the current acknowledgment that "any given [mental] disorder can be marked by disruptions among multiple mechanisms, and one particular mechanism may contribute to the psychopathology of a large number of disorders" (13, p. 632). Even the notion of a final common neural pathway leading from multiple determinants to a single clinical syndrome is "an empirical matter, not an a priori one" (14, p. 10).

In this context, the basic heterogeneity of mental disorders should not be overlooked. "Contemporary neo-Kraepelinian American psychiatry... practices as if there were biological commitments to over 300 DSM-defined entities" (15, p. 7), while the biological model may apply only to a few mental disorders, for instance, "schizophrenia, manic-depressive illness, melancholic depression and obsessive-compulsive disorder" (16, p. 56). These recent statements resonate with Jaspers' classification of mental disorders into three groups – cerebral illnesses (such as Alzheimer's disease), major psychoses (such as schizophrenia and manic-depressive illness), and personality disorders (including neurotic syndromes and abnormal personalities) – which are "essentially different from each other" (1, p. 610) and not equally amenable to biological research (those of the third group may just represent "variations of human nature").

Finally, Jaspers' emphasis on patients' "working through the illness" (1, p. 416), of which the "laborious development of a delusional system out of delusional experiences" is the best example, resonates with the contemporary notion that "the role of the person in mental disorder is not peripheral, merely as a passive victim of a disease to be fixed by medicine" (17, p. 182), and that person–disorder interactions are crucial in the shaping of psychopathological symptoms. So, not only patients' primary subjective experiences should be a major focus of psychopathological and neuroscientific enquiry, but patients' "attitude to their illness" (1, p. 414) can represent an important target for both research and intervention.

These are just a few examples of basic philosophical issues in psychiatry that are as relevant today as they were one century ago. They suggest that, although our diagnostic systems may be devised as "atheoretical", contemporary psychiatry does need a guiding philosophy. "If anyone thinks he can exclude philosophy and leave it aside as useless, he will eventually be defeated by it in some obscure form or other" (1, p. 770). This is one of the reasons (see also 18–22) why a revisitation of Jaspers' *General Psychopathology*, on the occasion of the 100th anniversary of the publication of its first edition, may represent a useful exercise for everyone involved in psychiatric research and practice.

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